$a+b \leq 2$ when the oxidation state of M is 4 or less and $a+b \leq 3$ when the oxidation state of M is greater than 4.

23. (Canceled)

24. (Previously Amended) The catalyst of claim 71, wherein X is halogen.

25. (Previously Amended) The catalyst of claim 71, wherein X is Cl.

26. (Previously Amended) The catalyst of claim 71, wherein M is a Group 3 to 7 metal.

27. (Previously Amended) The catalyst of claim 71, wherein M is a Group 4, 5, or 6 metal.

28. (Previously Amended) The catalyst of claim 71, wherein M is titanium, zirconium, or hafnium.

29. (Canceled)

30. (Original) The catalyst of claim 25, wherein M is titanium, zirconium, or hafnium.

31. (Previously Amended) A catalyst composition useful for the polymerization of olefins, comprising a catalyst of claim 71 and an activating co-catalyst.

32. (Original) The catalyst composition of claim 31, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

33. (Original) The catalyst composition of claim 32, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

34. (Original) The catalyst composition of claim 31, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

35 - 37 (Canceled)

38. (Previously Amended) The catalyst composition of claim 72, wherein X is halogen.

39. (Previously Amended) The catalyst composition of claim 72, wherein X is Cl.

40. (Previously Amended) The catalyst composition of claim 72, wherein M is a Group 3 to 7 metal.

41. (Previously Amended) The catalyst composition of claim 72, wherein M is a Group 4, 5, or 6 metal.

42. (Previously Amended) The catalyst composition of claim 72, wherein M is titanium, zirconium, or hafnium.

43. (Canceled)

44. (Original) The catalyst composition of claim 39, wherein M is titanium, zirconium, or hafnium.

45. (Canceled)

46. (Previously Amended) The catalyst composition of claim 72, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

47. (Original) The catalyst composition of claim 46, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

C1 Cntd.

48. (Previously Amended) The catalyst composition of claim 72, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

49. (Canceled)

50. (Original) The catalyst composition of claim 45, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

51. (Original) The catalyst composition of claim 45, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

52. (Canceled)

53. (Previously Amended) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 71.

54. (Canceled)

55. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 25.

56 - 57. (Canceled)

58. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 31.

59. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 32.

60. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 33.

61. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 34.

62. (Canceled)

63. (Previously Amended) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 72.

64. (Canceled)

65. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 39.

C1 Contd.

66. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 41.

67. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 44.

68. (Canceled)

69. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

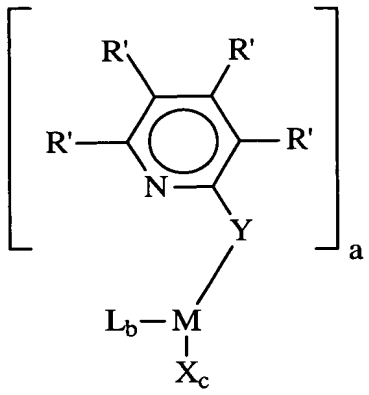
selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 46.

70. (Original) In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

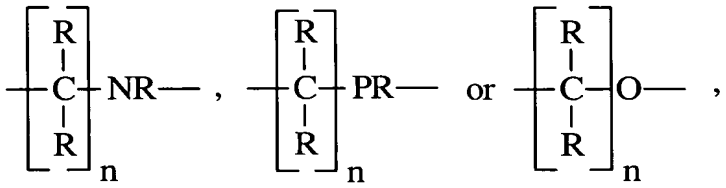
selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 47.

71. (CurrentlyAmended) A catalyst comprising units of the formula:

C1 Cont'd



where Y is ~~-O-~~, -S-,  , -P-,

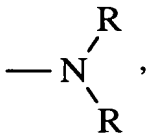


where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

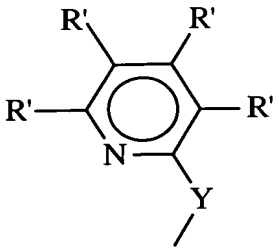
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

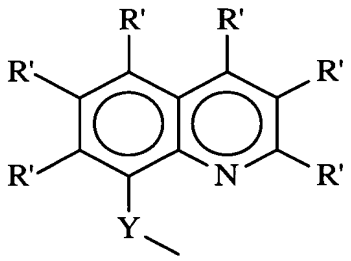
where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl, or



or



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

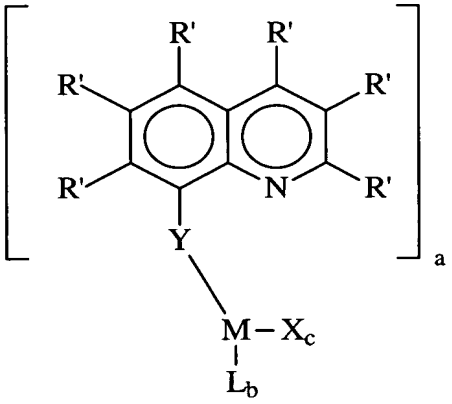
b is an integer from 0 to 2;

the sum of a+b≤3;

c is an integer from 1 to 6; and

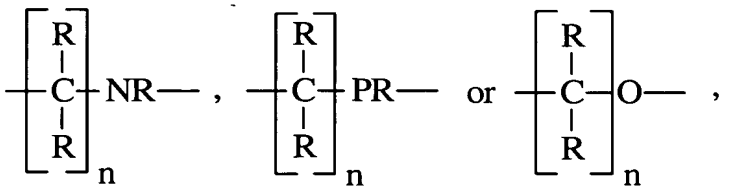
the sum a+b+c equals the oxidation state of M.

72. (Currently Amended) A catalyst composition suitable for the polymerization of olefins, comprising an activating co-catalyst and a catalyst of the formula:



where Y is ~~-O-~~, -S-, -N-, -P-,

C1 Cont'd

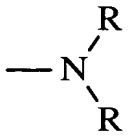


where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

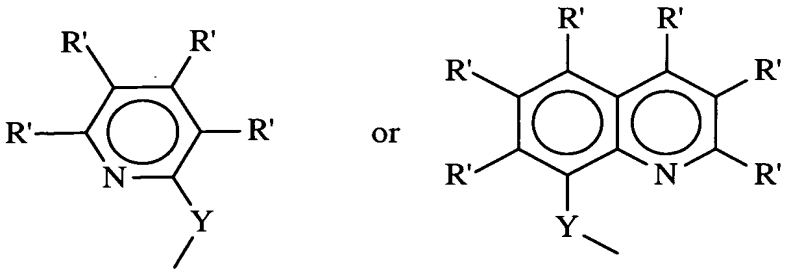
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl,



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

b is an integer from 0 to 2;

the sum of $a+b \leq 3$;

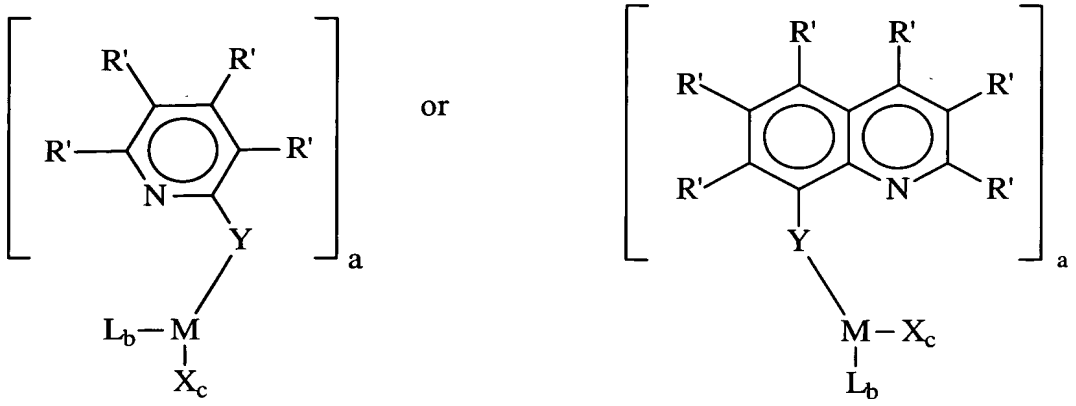
c is an integer from 1 to 6; and

the sum $a+b+c$ equals the oxidation state of M.

73. (Canceled).

Kindly cancel 23, 29, 35, 37, 43, 45, 49, 54, 56, 57, 62, 64, 68, and 73 without prejudice. Claims 21, 36, and 52 have been previously canceled. Please add new claims 74-96 as follows:

74. (New) A catalyst comprising units of the formula:



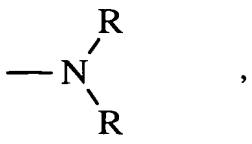
where Y is -O-,

where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

where each R' is independently C_{1-6} alkyl, C_{6-16} aryl, C_{1-6} alkoxy, halogen, or CF_3;

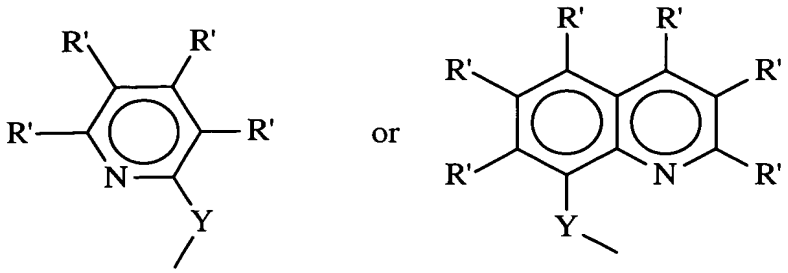
where M is zirconium, titanium, and hafnium;

where each X is independently halogen, C_{1-6} alkyl, C_{1-6} alkoxy, or



,

L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl, or



where n is an integer from 1 to 4;
a is an integer from 1 to 3;
b is an integer from 0 to 2;
the sum of a+b≤3;
c is an integer from 1 to 6; and
the sum a+b+c equals the oxidation state of M.

75. (New) The catalyst of claim 74, wherein the sum a+b≤2 when the oxidation state of M is 4 or less and a+b≤3 when the oxidation state of M is greater than 4.

76. (New) The catalyst of claim 74, wherein X is halogen.

77. (New) The catalyst of claim 74, wherein X is Cl.

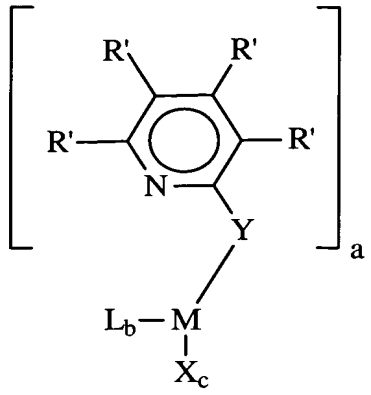
78. (New) A catalyst composition useful for the polymerization of olefins, comprising a catalyst of claim 74 and an activating co-catalyst.

79. (New) The catalyst composition of claim 78, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

80. (New) The catalyst composition of claim 79, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

81. (New) The catalyst composition of claim 78, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

82. (New) A catalyst comprising units of the formula:



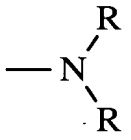
where Y is -O-,

where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

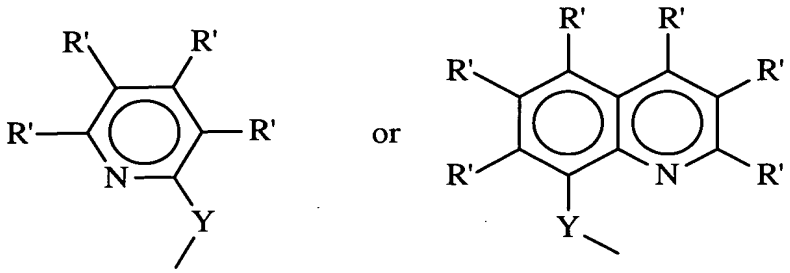
where M is a Group 3 to 10 metal;

where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



,

L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl, or



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

b is an integer from 0 to 2;

the sum of a+b≤3;

c is an integer from 1 to 6; and

the sum a+b+c equals the oxidation state of M.

83. (New) The catalyst of claim 82, wherein the sum a+b≤2 when the oxidation state of M is 4 or less and a+b≤3 when the oxidation state of M is greater than 4.

84. (New) The catalyst of claim 82, wherein X is halogen.

85. (New) The catalyst of claim 82, wherein X is Cl.

86. (New) The catalyst of claim 82, wherein M is a Group 3 to 7 metal.

87. (New) The catalyst of claim 82, wherein M is a Group 4, 5, or 6 metal.

88. (New) The catalyst of claim 82, wherein M is titanium, zirconium, or hafnium.

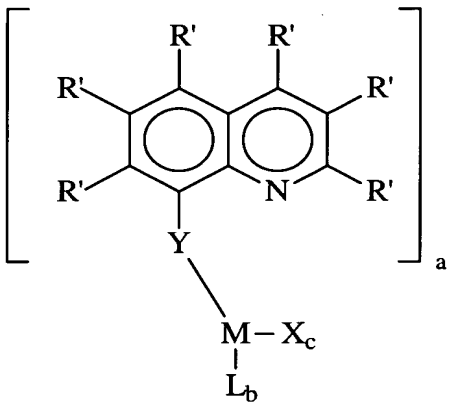
89. (New) A catalyst composition useful for the polymerization of olefins, comprising a catalyst of claim 82 and an activating co-catalyst.

90. (New) The catalyst composition of claim 89, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

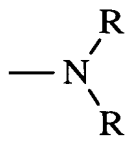
91. (New) The catalyst composition of claim 90, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

92. (New) The catalyst composition of claim 89, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

93. (New) A catalyst composition suitable for the polymerization of olefins, comprising an activating co-catalyst and a catalyst of the formula:

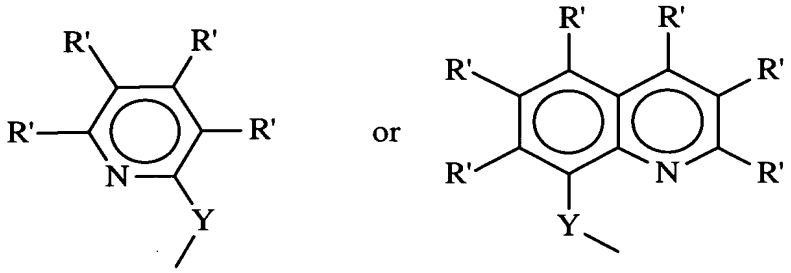


where Y is -O-,
where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;
where M is a Group 3 to 10 metal;
where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



,

L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl,



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

b is an integer from 0 to 2;

the sum of $a+b \leq 3$;

c is an integer from 1 to 6; and

the sum $a+b+c$ equals the oxidation state of M.

94. (New) The catalyst of claim 93, wherein the sum $a+b \leq 2$ when the oxidation state of M is 4 or less and $a+b \leq 3$ when the oxidation state of M is greater than 4.

95. (New) The catalyst of claim 93, wherein X is halogen.

96. (New) The catalyst of claim 93, wherein X is Cl.

97. (New) The catalyst of claim 93, wherein M is a Group 3 to 7 metal.

98. (New) The catalyst of claim 93, wherein M is a Group 4, 5, or 6 metal.

99. (New) The catalyst of claim 93, wherein M is titanium, zirconium, or hafnium.

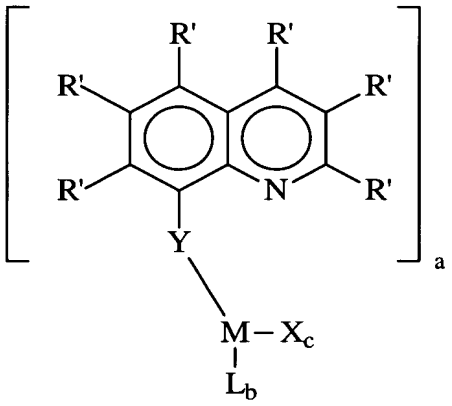
100. (New) A catalyst composition useful for the polymerization of olefins, comprising a catalyst of claim 93 and an activating co-catalyst.

101. (New) The catalyst composition of claim 100, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

102. (New) The catalyst composition of claim 101, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

103. (New) The catalyst composition of claim 100, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

104. (New) A catalyst comprising units of the formula:

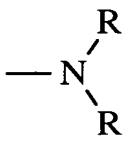


where Y is -O-,

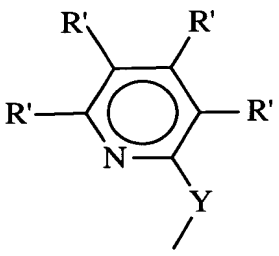
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

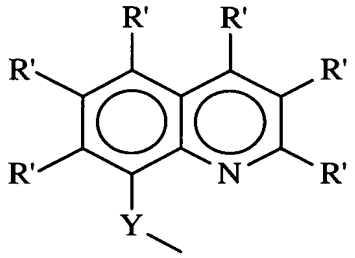
where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl,



or



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

b is an integer from 0 to 2;

the sum of $a+b \leq 3$;

c is an integer from 1 to 6; and

the sum a+b+c equals the oxidation state of M

with the proviso that trichlorotitanium 8-quinolinate, dichlorotitanium bis(8-quinolinate), and monochlorotitanium tris(8-quinolinate) are excluded.